



University of Connecticut
Institute of Materials Science

Testimony to Connecticut Legislature Commerce Committee

Re: Raised Bill No. 551

“An Act Concerning Nanotechnology”

March 4, 2008

Honorable members of the House and Senate:

The present testimony is in favor of the above-mentioned bill. I am writing to you in my capacity as a professor and researcher. Nanotechnology and Bio-Nanotechnology is my field of expertise and I have been conducting research in this field in excess of 15 years, where I have published in excess of 110 peer reviewed papers and 10 patents.

Defining the Problem: The State of CT is surrounded by two education and technological giants (MA and NY), which have moved fast in establishing multiple Centers and Programs on Nanotechnology, among many other States nation wide. These Centers promote education at its highest level and are crucial to assist in developing and retaining the necessary technological infrastructure slated to dominate in the first half of 21st Century. Our State's Institutions of higher education are slowly drained in both brainpower and technological competitiveness due to our lack in establishing formidable Nanotechnology Centers.

Nanotechnology, Higher Education and Entrepreneurship: The unique aspects of nanotechnology is its ability to bring down the barriers of traditional scientific disciplines (like chemistry, biology, engineering, physics, pharmacy, etc.) A nanotechnologist is a “renaissance” person, who has profound ability to cross over different disciplines and harness the unique aspects of each discipline to develop “revolutionary” as opposed to “evolutionary” technologies.

Nanotechnology is synonymous with higher education. One cannot conduct nanotechnology unless he/she possesses the appropriate educational background and the necessary infrastructure to allow you access at the nanostructure, which typically measures between 1/50,000 and 1/500 of an average human hair! Such infrastructure is extremely expensive to buy and maintain and requires constant attention to keep it operational. The choice of UCONN and Yale to house CT Centers for Nanoscale Science and Development is sound, since they possess the key intellectual investment (professors, technicians, post-docs and students) to keep these facilities at tip-top shape.

At the same time, in order to conduct Nanotechnology, one needs to risk crossing over to a new discipline in order to harness the build in knowledge of another discipline. This cross over is often difficult and tricky, and it is synonymous with “Entrepreneurship”. In fact many of my students (15 Ph.D.s graduated at present) hold major posts in Industries, National Labs and Venture Capital firms, trying to realize new ideas, products and start-ups associated with Biotechnology, Clean Energy production, Advanced Composites, Advanced Lighting Sources,

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Displays, etc. Unfortunately, five of them work in the grated Boston area, and the rest are evenly distributed in the NY/NJ/Pennsylvania/Ohio corridor.

We have worked hard to educate them and now these Ph.D. holders (the cream of the crop in higher education) are taken by our neighboring states! Why is that? Knowing that the majority of my students work for "young" small to medium size companies, I believe the answer originates to the fact that much of our competitive Institutions in MA, NY, NJ, Pennsylvania, Ohio, California, Texas, etc. have been instrumental in spinning out start up corporations to commercialize the technologies that are invented in their laboratories. UCONN and Yale have started doing this, but we are far from Route-128 in Boston, MA. I am happy to see that this bill, in addition to infrastructure, it proposes to also assist in developing new industrial ties with our major research institutions.

Nanotechnology is slated to revolutionize the next drug and life science innovation, the next energy breakthrough, the next robotics advance, the next super strong and super light material that will carry us to the Space and feature itself on our bicycle, skis, rackets, etc. the next transportation solution, the next telecommunication and computer innovation.

CT has among the strongest *pharmaceutical* and *defense* industries. I applaud this initiative and I would like to urge you to enthusiastically support this Nanotechnology bill. This bill invests on the future of our great State that is currently drained technologically and brain-wise nationwide by more forthcoming States that have enacted on similar bills and have established formidable Center of Nanotechnology and Nano-Bio-technology.

Sincerely,

Fotios Papadimitrakopoulos

Member of the State Nanotechnology Committee and one of the Founding Members of
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